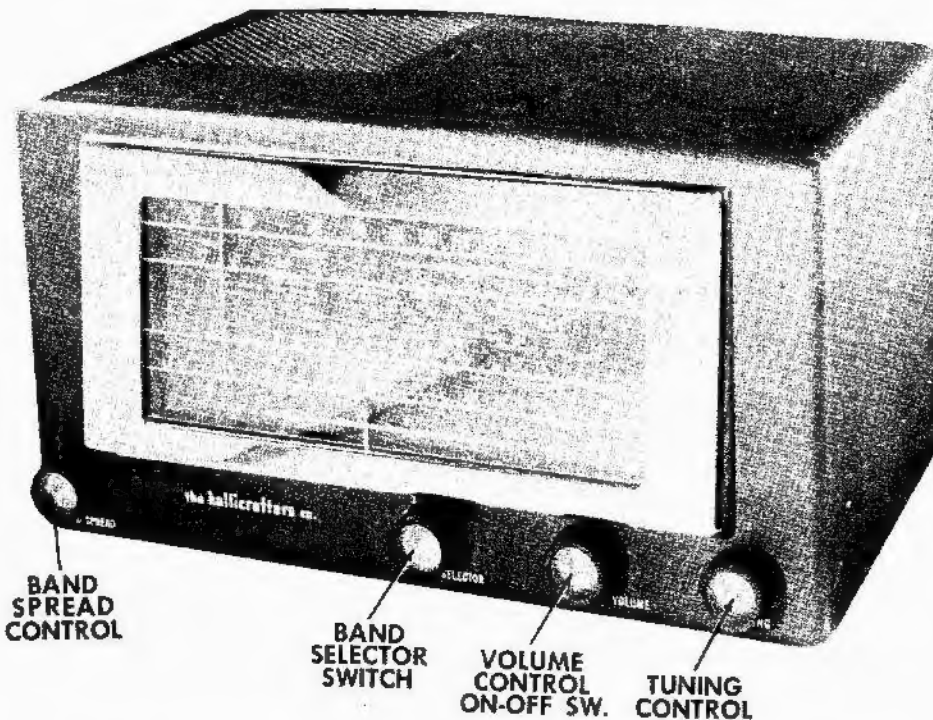




**HALLICTRAFTERS  
MODEL 5R10A**



**HALLICTRAFTERS  
MODEL 5R10A**

TRADE NAME	Hallcrafters Model 5R10A		
MANUFACTURER	Hallcrafters Co., Inc., 4401 W. 5th Ave., Chicago Ill.		
TYPE SET	AC-DC Operated Multi-Band Superheterodyne Receiver		
TUBES (five)	Types 12SA7 Conv., 12SK7 IF Amp., 12SQ7 Det.-AVC-AF Amp. 50L6GT Power Output, 35Z5GT Rectifier		
POWER SUPPLY	105-125 Volts AC-DC	RATING .25 Amp. @ 117 Volts AC	
TUNING RANGE	(Band #1) 540-1650KC, (Band #2) 1, 65-5.1MC,	(Band #3) 5-14.5 MC, (Band#4) 13-31 MC	

**ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT**

To set pointer turn tuning gang fully closed and set pointer to the reference mark to the left of 55 on the BC scale.  
To set band spread pointer, turn bandspread tuning gang fully open and set pointer to zero on the reference scale.  
The RMA dummy antenna referred to in the alignment table consists of a 200 MMF capacitor in series with a 20 microhenry choke which is shunted by a 400MMF capacitor in series with a 400Ω carbon resistor.  
Turn the bandspread dial to zero on the reference scale.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1. .01MFD	High side to stator on front section of tuning gang. Low side to chassis.	455KC (400Ω Mod.)	1	1000KC	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .0001MFD to reduce hum modulation.
2. RMA	High side thru dummy to antenna terminal A1(connect jumper between A2 and G) Low side to chassis.	30MC	4	30MC	"	A5, A6	Adjust for maximum output. Rock tuning gang while adjusting A6.
3. "	"	14MC	3	14MC	"	A7, A8	Adjust for max. output. Rock tuning gang while adjusting A7.
4. "	"	5MC	2	5MC	"	A9, A10	Adjust for maximum output. Rock tuning gang while adjusting A9.
5. "	"	1500KC	1	1500KC	"	A11, A12	Adjust for maximum output.
6. "	"	600KC	1	600KC	"	A13	Repeat steps 5&6 until no further improvements can be made.

**HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana**

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# **PARTS LIST AND DESCRIPTIONS** TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		HALLCRAFTHER PART No.	STANDARD REPLACEMENT		
V1	Converter	90X125A7	125A7	6R	
V2	IF Amplifier	90X125K7	125K7	8N	
V3	Detector-AVC-AF Amplifier	90X125Q7GT	125Q7GT	8Q	
V4	Power Output	90X50L6GT	50L6GT	7AC	
V5	Rectifier	90X35Z5GT	35Z5GT	6AD	

## **CAPACITORS**

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

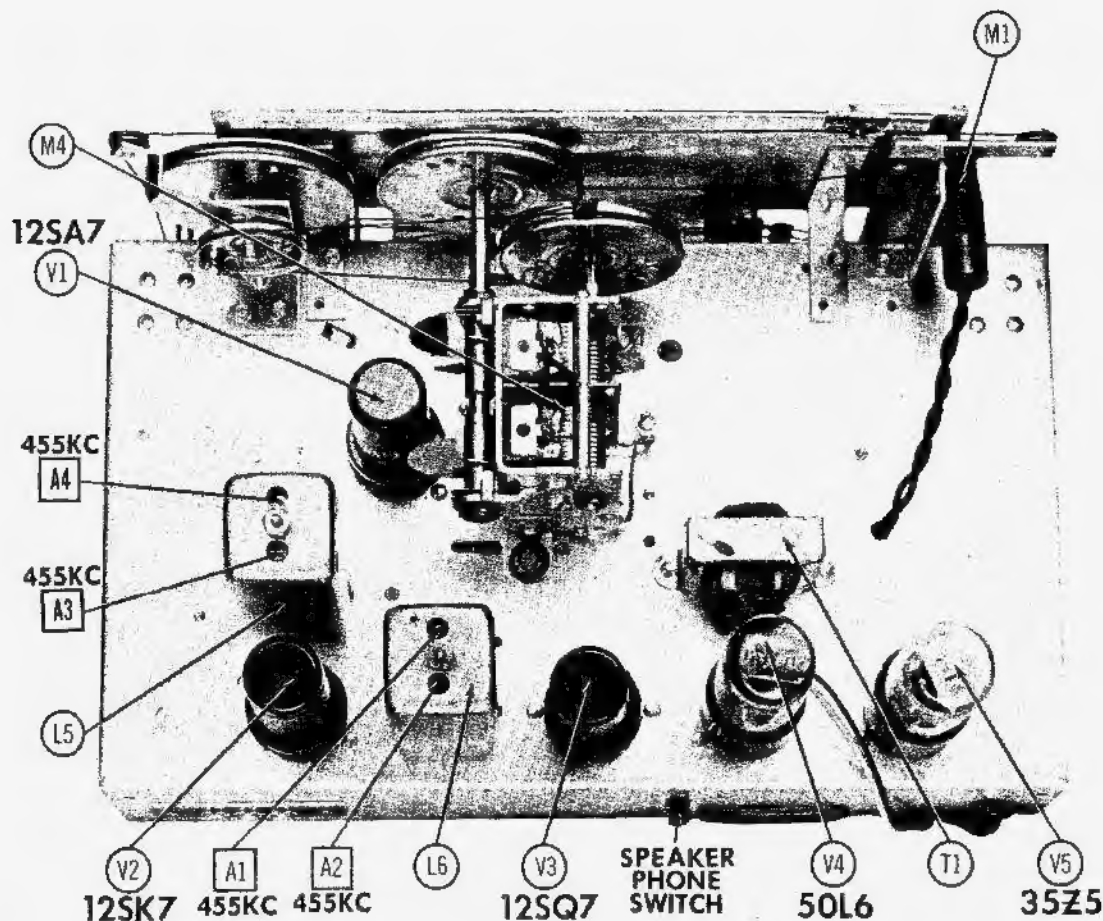
ITEM No.	RATING CAP.	VOLT	REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
			HALLCRAFTHER PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNFILL DUBHEIR PART No.	ERE PART No.	
C1A	50	150	45B091	PRS150/40-40 40 PRS25/25		EZ55815C		Filter (Red)
B	40	150					TYA-120S	Filter (Yellow)
C	40	150						Decoupling (Yellow)
D	20	25						Output Cathode (Blue)
C2	2700	500	47X30B272J	1464-003	D6-221	IR6D3	MS-23	Fixed Padder
C3	220	500	47B20222K5	1468-00025	DD-502	5W3T25	1-M-325	RF Coupling
C4	5000	500	47A198	BPD-005	DD-502	1D5D5	5HK-D5	Coax. Plate Dec.
C5	500	500	47X30B222K	1469-00025		5R3T25	MS-23	Osc. Grid Cap.
C6	3000	500	47X30B303J	1464-003		1R5D3	MS-23	Fixed Padder
C7	2200	500	47X30B322J	1464-0025		1R5D25	5HK-D5	Fixed Padder
C8	5000	500	47A158	BPD-005	DD-502	1D5D5	6TM-S2	Osc. Feedback
C9	.02	600	46A7203J	P688-02	DF-203	PT682	6TM-S1	AVC Filter
C10	.1	600	46A2104J	P688-1	DF-104	PT681	2TM-S5	IF Amp. Decoupling
C11	.05	200	46A503J	1468-00025	D6-221	5W3T25	1-M-325	Diode RF Filter
C12	220	500	47B30221K5	1468-00025	D6-221	5W3T25	34C3	Audio Coupling
C13A	B	220		P688-002	D6-202	5W3T25	6TM-S1	AF Amp. Plate
C14	.01	600	46A151	S1220	D6-221	5W3T25	6TM-S2	Audio Coupling
C15	.02	600	46A2103J	P688-005	D6-502	PT68D5	4TM-S2	Power Output Plate
C16	.03	600	46A2103J	P688-01	D6-103	PT68S2	4TM-S5	Line Filter
C17	.02	400	46B2031G	P688-02	DF-203	PT68A2		Line Isolation
C18	.05	600	46A503J	P688-05	DF-503	PT68S5		

† Some models use 100MMF in this application (Part No. 47X220R10K)

## **CONTROLS**

ITEM No.	RATING	REPLACEMENT DATA				INSTALLATION NOTES
		RESISTANCE	WATTS	HALLCRAFTHER PART No.	CENTRALAB PART No.	
R1A	2 Meg			25B996	AG-86-Z	Volume Control
B	Shalt			Not Req.	RS-2	Attach to R1A per instructions
C	Switch			Not Req.	SWB	Attach to R1A per instructions

# **CHASSIS—TOP VIEW**



# PARTS LIST AND DESCRIPTIONS (Continued)

## RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	PART No.	IRC PART No.	
R2	10K $\Omega$		23X20X103M	BTS-10K	Antenna Coil Shunt.
R3	470K $\Omega$		23X20X474M	BTS-470K	Converter Grid.
R4	2.2Meg		23X20X225M	BTS-2.2Meg	AVC Network
R5	2.2Meg		23X20X225M	BTS-2.2Meg	AVC Network
R6	22K $\Omega$		23X20X223M	BTS-22K	Oscillator Grid
R7	150		23X20X150M		Parasitic Suppressor-See note
R8	22K $\Omega$		23X20X223M		Parasitic Suppressor
R9	390 $\Omega$		23X20X390K	BTS-390	IF Cathode
R10	290 $\Omega$		23X20X290K	BTS-290	IF Amplifier Decoupling
R11	470K $\Omega$		23X20X474M	BTS-470K	Diode Filter
R12	10Meg		23X20X106M	BTS-10Meg	AF Amplifier Grid
R13	220K $\Omega$		23X20X224M	BTS-220K	AF Amplifier Plate
R14	450K $\Omega$		23X20X454M	BTS-450K	Output Grid
R15	500 $\Omega$		23X20X500K	BTS-500K	Output Cathode
R16	220 $\Omega$		23X20X221M	BTA-220	Filter
R17	220 $\Omega$		23X20X221M		Filter
R18	0000 $\Omega$		23X20X000M		Surge Limiter
R19	22 $\Omega$		23X20X150M		Head Phone Shunt
R20	150		23X20X150M		Series Dial Light
R21	150		23X20X150M		

NOTE: Some models use 10K $\Omega$  resistor in this application.

## TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING		REPLACEMENT DATA		INSTALLATION NOTES
	IMPEDANCE	DC RES.	Ballistics PART No.	STANCOR PART No.	
T1	1.7K $\Omega$	3.2 $\Omega$	55A127	A-3876	RU-2

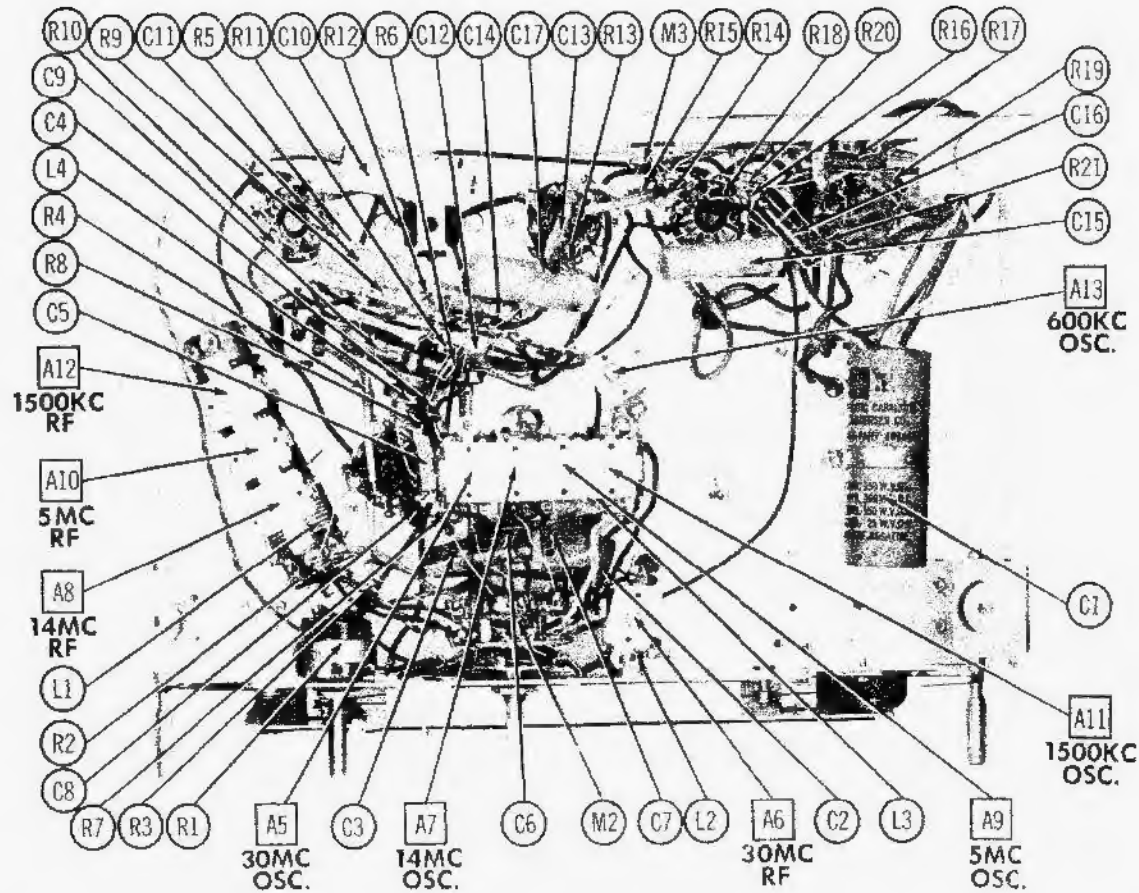
## SPEAKER

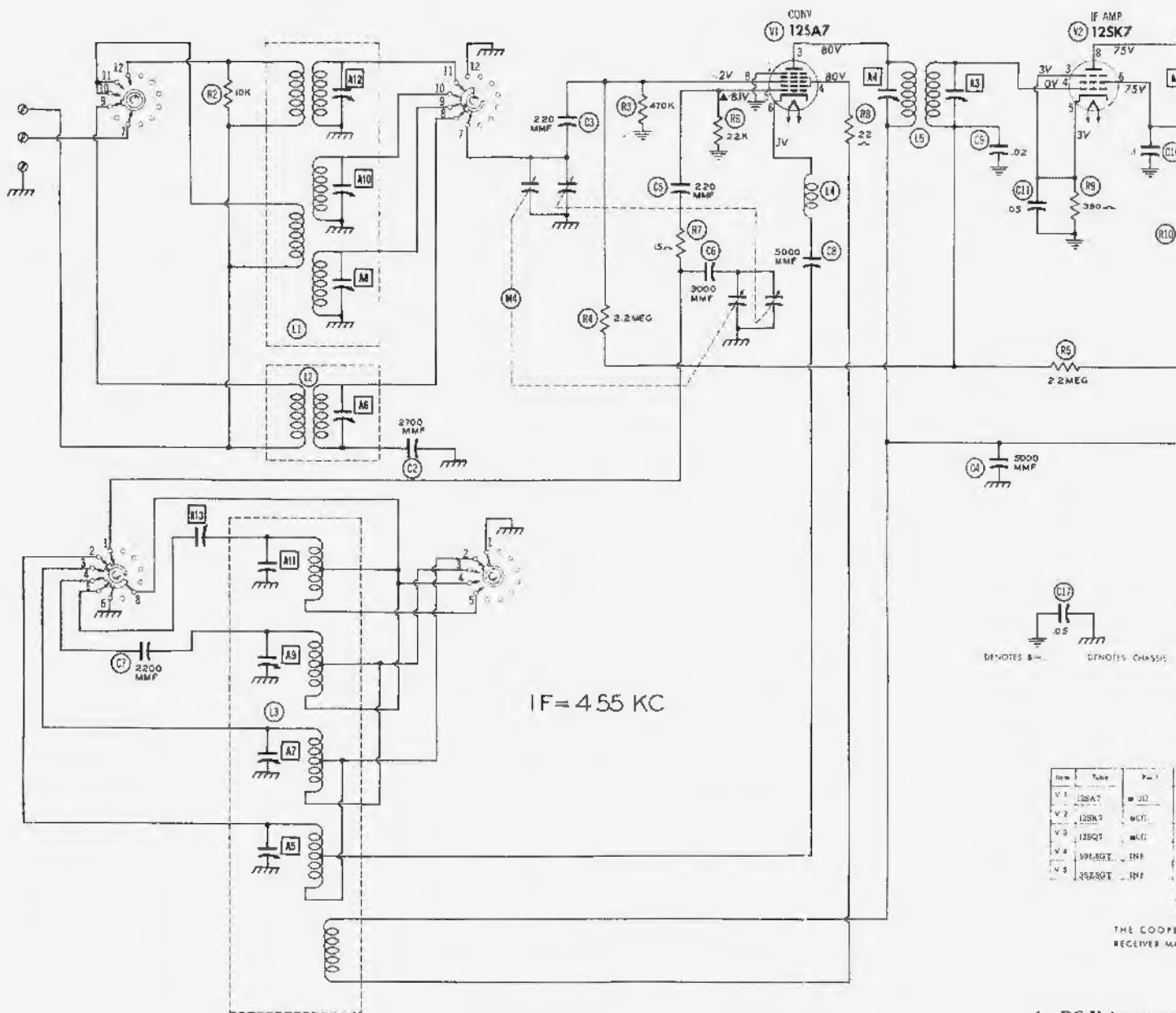
ITEM No.	RATINGS		REPLACEMENT DATA		NOTES
	FIELD	V. C. IMP.	Ballistics PART No.	JENSEN PART No.	
SP1	P. M.	3.2 $\Omega$	85C030	ST-105 Mud P5-X	
SP2	CONE DIA.	3/18 in.			

## COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI	SEC.	Ballistics PART No.	MERIT PART No.	
L1A	Ant. Coil	27 $\Omega$	0 $\Omega$			Band 1
L1B	Ant. Coil	12 $\Omega$	0 $\Omega$	51C21		Band 2
L1C	Ant. Coil	0 $\Omega$	0 $\Omega$			Band 3
L2	Ant. Coil	.2 $\Omega$	0 $\Omega$	51B1015		Band 4
L3A	Osc. Coil	2.4 $\Omega$	0 $\Omega$			Band 1
L3B	Osc. Coil	2.4 $\Omega$	0 $\Omega$	51C22		Band 2
L3C	Osc. Coil	0 $\Omega$	0 $\Omega$			Band 3
L3D	Osc. Coil	0 $\Omega$	0 $\Omega$			Band 4
L4	RF Choke	9.3 $\Omega$	0 $\Omega$	53A107		
L5	Input IF	20 $\Omega$	20 $\Omega$	53B184		Tap at 2 $\Omega$
L6	Output IF	20 $\Omega$	20 $\Omega$			Tap at 2 $\Omega$

# CHASSIS—BOTTOM VIEW

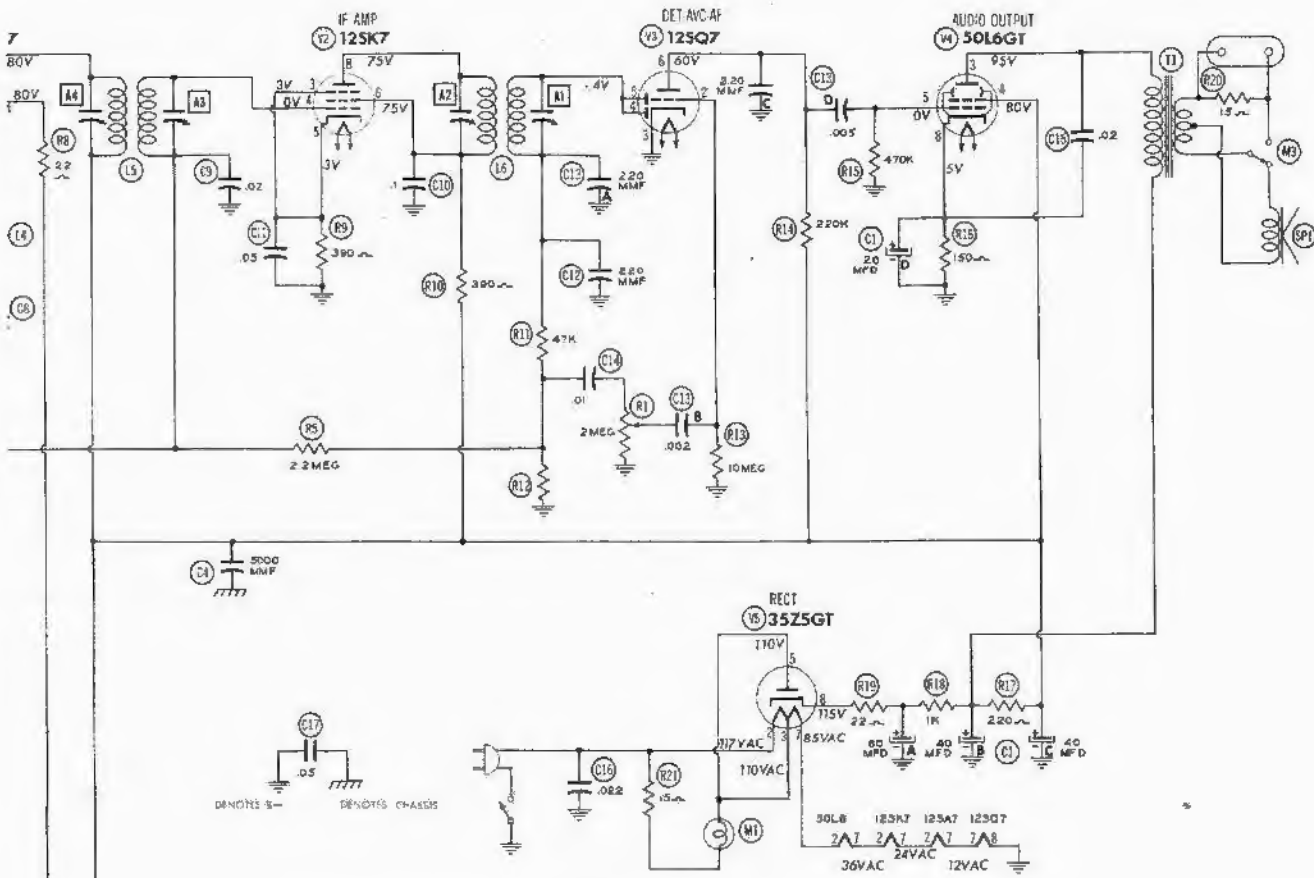




A PHOTOFAC STANDARD NOTATION SCHEMATIC  
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1. DC Voltage mea  
measured at 1.00
2. Socket connectio
3. Measured values
4. Line voltage mai
5. Nominal toleran  
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6. Volume control  
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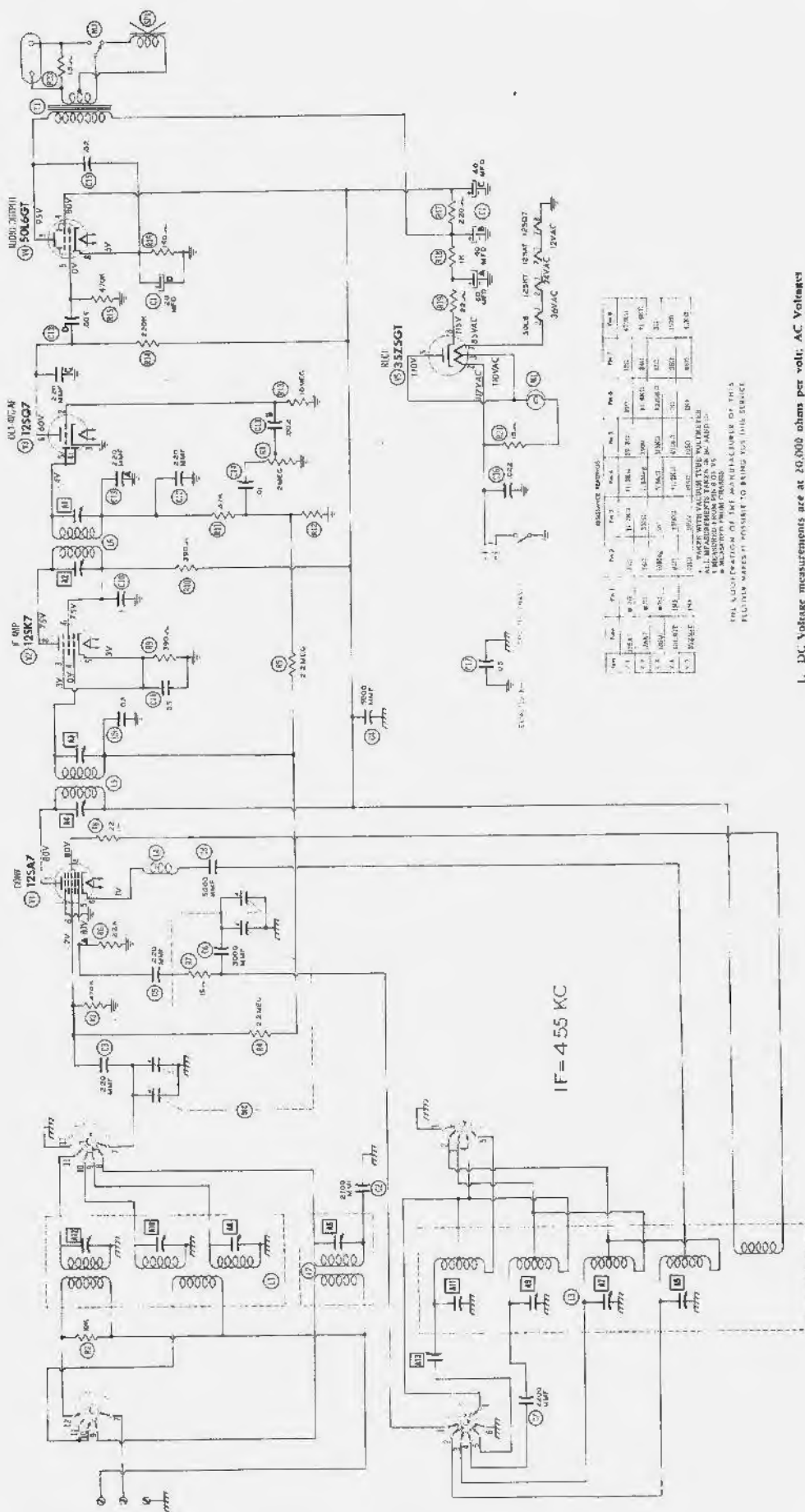
#### RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V1	12SK7	240	11.2K	11.2K	22.5K	100	120	410K	
V2	12SQ7	240	960	1.24M	390	11.2K	240	11.2K	
V3	12SQ7	13M	75	51K	5.0K	120	0	0	
V4	50L6GT	1K	860	11.2K	470K	90	360	150	
V5	35Z5GT	120	100	100	100	120	85	40K	

\* TAKEN WITH VACUUM TUBE VOLTMETER  
 ALL MEASUREMENTS TAKEN IN DC BAND (1)  
 † MEASURED FROM PIN 8 OF V5  
 ‡ MEASURED FROM CHASSIS

THE COOPERATION OF THE MANUFACTURER OF THIS  
 RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of  $\pm 10\%$  in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



Resistance Method

Pin	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	100K	100K	100K	100K	100K	100K	100K	100K
2	100K	100K	100K	100K	100K	100K	100K	100K
3	100K	100K	100K	100K	100K	100K	100K	100K
4	100K	100K	100K	100K	100K	100K	100K	100K
5	100K	100K	100K	100K	100K	100K	100K	100K
6	100K	100K	100K	100K	100K	100K	100K	100K
7	100K	100K	100K	100K	100K	100K	100K	100K
8	100K	100K	100K	100K	100K	100K	100K	100K

Pin 1 to Pin 8

THE LOCATION OF THE WATERSHED OF THIS  
FLOID MAPS IS POSSIBLE TO BEING FOR THIS SERVICE

1. DC Voltage measurements are at 20,000 ohms per volt. AC Voltages are at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage regulation.
5. Minimum volume control setting makes possible a variation of  $\pm 10\%$  in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.